



State Revolving Fund Loan Programs

Drinking Water, Wastewater, Nonpoint Source

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

CITY OF EVANSVILLE CASS AVENUE SEWER SEPARATION CONSTRUCTION PROJECT PER D PROJECT 4 SRF WW08 13 82 05

DATE: March 19, 2009

TARGET PROJECT APPROVAL DATE: April 19, 2009

I. INTRODUCTION

The above entity has applied to the Clean Water State Revolving Loan Fund (SRF) for a loan to finance all or part of the wastewater project described in the accompanying Environmental Assessment (EA). As part of facilities planning requirements, an environmental review has been completed which addresses the project's impacts on the natural and human environment. This review is summarized in the attached EA.

II. PRELIMINARY FINDING OF NO SIGNIFICANT IMPACT (FNSI)

The SRF Clean Water Program has evaluated all pertinent environmental information regarding the proposed project and determined that an Environmental Impact Statement is not necessary. Subject to responses received during the 30-day public comment period, and pursuant to Indiana Code 4-4-11, it is our preliminary finding that the construction and operation of the proposed facilities will result in no significant adverse environmental impact. In the absence of significant comments, the attached EA shall serve as the final environmental document.

III. COMMENTS

All interested parties may comment upon the EA/FNSI. Comments must be received at the address below by the deadline date above. Significant comments may prompt a reevaluation of the preliminary FNSI; if appropriate, a new FNSI will be issued for another 30-day public comment period. A final decision to proceed, or not to proceed, with the proposed project shall be effected by finalizing, or not finalizing, the FNSI as appropriate. Comments regarding this document should be sent within 30 days to:

Max Henschen
Senior Environmental Manager
State Revolving Fund -- IGCN 1275
100 N. Senate Ave.
Indianapolis, IN 46204
317-232-8623

ENVIRONMENTAL ASSESSMENT

I. PROJECT IDENTIFICATION

Project Name and Address: **Cass Avenue Sewer Separation Project**
Evansville Water & Sewer Utility PER D, Project 4
1 NW Martin Luther King Jr. Blvd., Room 104
Evansville, IN 47740-0001

SRF Project Number: WW08 13 82 05

Authorized Representative: Mr. Harry Lawson, General Manager
Evansville Water & Sewer Utility

II. PROJECT LOCATION

Evansville is located in southeastern Vanderburgh County in southwest Indiana. The study area includes the majority of Vanderburgh County with the exception of Union, German, and Armstrong Townships. The city's study area and 20-year service area are one and the same. The Cass Avenue project area is located on the southeast side of Evansville. The project area is located in the Evansville South USGS topographic quadrangle in Knight Township, T6S, R10W, sections 2, 3 and 34; see Exhibit 1.

III. PROJECT NEED AND PURPOSE

Evansville's collection system consists of combined and sanitary sewers, with 23 combined sewer overflows (CSOs) and 70 pumping stations. The Cass Avenue Sewer Separation project is part of the city's revised CSO Long Term Control Plan (LTCP), which is currently under review by the Indiana Department of Environmental Management (IDEM).

During heavy rainfall, the capacity of the 96-inch combined sewer along Covert Avenue is exceeded; this causes stormwater and untreated sewage to surcharge into the upstream sewers and to back up into basements; untreated sewage also discharges into the Ohio River and other CSO receiving streams.

The city is implementing the CSO LTCP to reduce the frequency and volume of untreated CSO discharges; some combined sewers will be eliminated. Expected results from the proposed Cass Avenue sewer separation project include: reduction of basement backups and street flooding, reduction of wastewater discharges to receiving streams, and relief from CSO regulations.

Many of the residents in the project area have experienced sanitary sewer backups into their homes during storm events due to surcharging of the Covert Avenue combined sewer. The sanitary sewers are connected directly to, or are just upstream of, the Covert Avenue combined sewer.

IV. PROJECT DESCRIPTION

The recommended alternative consists of installing a new storm sewer system to the east and west of Boeke Road along Cass Avenue, Sweetser Avenue and other streets. The new storm sewers would connect to a proposed 4- by 7-foot reinforced concrete box on Boeke Road. A new sanitary sewer system will be installed along Boeke Road and convey the wastewater to a proposed lift station by gravity. This proposed lift station will discharge directly to the existing 96-inch combined sewer and act as a check valve to prevent the combined sewer from surcharging into the project area. A stormwater trunkline, ranging in size from 48- to 96-inches, will be constructed along Boeke Avenue from Cass Avenue to East Riverside Drive and then along East Riverside Drive to its outlet at the K-2/K-2A Levee ponding area. Ditch grading will be required at the outfall in the K-2/K-2A Levee ponding area.

The proposed sewer separation project includes (see Exhibit 2)

- A. Installing approximately 227 storm inlets;
- B. Installing approximately twenty-two 48-inch diameter storm manholes;
- C. Installing approximately twenty-six 60-inch diameter storm manholes;
- D. Installing approximately four 120-inch diameter storm manholes;
- E. Installing approximately two 144-inch diameter storm manholes;
- F. Installing approximately eleven 36-inch diameter storm manholes;
- G. Installing approximately 33 sanitary sewer manholes;
- H. Installing approximately one 72-inch by 48-inch tee;
- I. Installing approximately twelve 84-inch by 48-inch tees;
- J. Installing approximately 2,351 feet of 12-inch diameter reinforced concrete pipe (RCP) storm sewer;
- K. Installing approximately 1,553 feet of 15-inch diameter RCP storm sewer;
- L. Installing approximately 1,802 feet of 18-inch diameter RCP storm sewer;
- M. Installing approximately 320 feet of 21-inch diameter RCP storm sewer;
- N. Installing approximately 3,620 feet of 24-inch diameter RCP storm sewer;
- O. Installing approximately 1,765 feet of 30-inch diameter RCP storm sewer;
- P. Installing approximately 1,995 feet of 36-inch diameter RCP storm sewer;
- Q. Installing approximately 1,335 feet of 72-inch diameter RCP storm sewer;

- R. Installing approximately 4,919 feet of 84-inch diameter RCP storm sewer;
- S. Installing approximately 3,887 feet of 12-inch diameter RCP storm sewer with backfill;
- T. Installing approximately 759 feet of 15-inch diameter RCP storm sewer with backfill;
- U. Installing approximately ten feet of 18-inch diameter RCP storm sewer with backfill;
- V. Installing approximately 672 feet of 4-foot by 7-foot box culvert;
- W. Installing approximately 2,989 feet of 8-inch diameter polyvinyl chloride (PVC) sanitary sewer;
- X. Installing approximately 705 feet of 10-inch diameter PVC sanitary sewer;
- Y. Installing approximately 1,479 feet of 18-inch diameter PVC sanitary sewer;
- Z. Installing approximately 1,427 feet of 24-inch diameter PVC sanitary sewer;
- AA. Installing one headwall structure at Raccoon Ditch;
- BB. Installing one sanitary lift station with two pumps having a rated capacity of 1,000 gallons per minute (gpm) each;
- CC. Replacing approximately 24,590 square yards of pavement;
- DD. Installing approximately 54,153 cubic yards of aggregate #11 for bedding material;
- EE. Installing approximately 1,272 cubic yards of compacted aggregate base #53 for bedding material;
- FF. Repairing approximately 12,640 square yards of asphalt pavement;
- GG. Replacing approximately 295 square yards of gravel in alley; and
- HH. Installing approximately 9,558 feet of concrete curbing.

Based on a 25-year design storm, the project will keep runoff from approximately 110 acres from entering the combined sewer, which will reduce sewer surcharging, basement backups, street flooding and the volume and frequencies of discharges at CSO 001.

V. ESTIMATED PROJECT COSTS, AFFORDABILITY AND FUNDING

A. Selected Plan Estimated Cost Summary

Construction Components	Costs
Construction Staking	\$ 40,000
Dewatering	1,000,000
Utility Relocation (e.g., water, gas, telephone)	1,500,000

Sanitary Lift Station with Generator	425,750
Sanitary Sewer Reconnections	100,000
Asphalt Repair	309,348
Pavement Replacement	1,518,035
Common Excavation	2,073,028
Aggregate #11 bedding material	649,836
Aggregate # 53 bedding material	167,832
Backfill	158,320
Gravel Replacement	4,779
Concrete Curbing	184,661
Storm Inlets	324,580
Storm Manholes	250,450
Sanitary Manholes	77,100
Storm sewer tee fittings	124,400
Storm Sewer Pipe, RCP	2,735,655
4- by 7-foot Culvert Box	371,616
Sanitary Sewer Pipe, PVC	110,296
Headwall	20,000
Site Restoration	10,000
Connection to Existing Lift Station	24,700
Mobilization/Demobilization	852,627
Traffic Control	609,020
Pavement Marking	243,608
Signage	<u>243,608</u>
Construction and Equipment Subtotal	\$ 14,129,249
Contingencies	<u>1,412,925</u>
Total Estimated Construction Cost	\$ 15,542,174
 Non-Construction Costs	
Construction Inspection	1,600,000
Financial/Legal	375,000
Administrative	60,000
Right of Way Engineering Costs	15,000
Land Costs	<u>25,000</u>
Non-Construction Subtotal	\$ 2,075,000
 Total Estimated Project Cost (rounded)	 \$17,617,174

* Ineligible for SRF funding

- B. Evansville will borrow approximately \$17,592,174 from the State Revolving Fund (SRF) Loan Program for a 20-year term at an interest rate to be determined at loan closing. Monthly user rates and charges may need to be analyzed to determine if adjustments are required for loan repayment. The city will pay the land costs with local funds.

VI. DESCRIPTION OF EVALUATED ALTERNATIVES

No Action Alternative: The no action alternative was rejected, since the project area would continue to experience frequent surface flooding and backups as a result of the combined sewers becoming hydraulically overloaded during heavy rains.

Above-Ground Detention and Lift Station: This alternative involves constructing new storm sewers to the east and west of Boeke Road along Cass Avenue and Sweetser Avenue. The new storm sewer system would be connected to an above-ground detention area. This detention area would require the acquisition and demolition of approximately one city block. A stormwater lift station would be constructed at the detention basin where it would discharge the stormwater to an existing 36-inch RCP sewer at Southeast Boulevard and Beckman Avenue. A sanitary sewer system would also be installed on the west side of the project area to convey the wastewater to the proposed sanitary lift station by gravity. A sanitary lift station would pump the wastewater to the existing 96-inch combined sewer and also serve as a check valve by preventing the combined wastewater from surcharging into the project area. Due to the acquisition of such a large piece of land, this alternative was rejected.

Below-Ground Detention and Lift Station: This alternative is very similar to the alternative described above with the exception that the detention basin would be constructed below ground. Due to the acquisition of such a large piece of land, this alternative was rejected.

Stormwater Trunkline to the K-2/K-2A Levee Ponding Area: Based on cost effectiveness, practicality, technical feasibility, reliability and environmental soundness this is the selected alternative and is described in Section IV above.

VII. ENVIRONMENTAL IMPACTS OF THE FEASIBLE ALTERNATIVES

A. Direct Impacts of Construction and Operation

Disturbed and Undisturbed Areas: The proposed project will occur within previously disturbed streets and easements. There will be one new sanitary pump station on Waggoner Avenue between South Parker Drive and Alexander Avenue (see Exhibit 3). The proposed lift station site is city-owned property that has been previously disturbed during neighborhood development.

Structural Resources (Exhibits 4, 5, & 6): The Vanderburgh County Historic Sites and Structures Inventory maps show scattered historic sites within the project area, but none will be affected by the proposed project. Any visual, audible or atmospheric effects will be temporary. The SRF's Finding pursuant to Section 106 of the National Historic Preservation Act is: "no historic properties affected."

Plants and Animals: The construction and operation of this project will not impact state or federally- listed threatened endangered species or their habitat.

Prime Farmland: The proposed project will not cause a conversion of prime farmland.

Wetlands (Exhibit 7): The project will not affect wetlands.

100-Year Floodplain (Exhibit 8): Only the work in the lower portion of Raccoon Ditch will occur in the 100-year floodplain, but since the sewer pipe will be underground there will be no displacement of water.

Surface Waters (Exhibits 9 & 10): The proposed 84-inch stormwater trunkline will discharge to Raccoon Ditch via a cast-in-place concrete headwall and an outfall channel. The ditch/swale has been heavily altered over the years. The discharge site will be graded and rip-rapped to stabilize the ditch during rain events. A 4-foot clay liner per Evansville Levee Authority requirements will also be installed in the discharge site area. The project will not affect Exceptional Use Streams, Outstanding State Resource waters, or Natural and Scenic Rivers.

Groundwater: Dewatering will be employed, if necessary, during construction with the flow being directed to a sedimentation basin prior to being discharged to surrounding waters. The proposed project will not impact a drinking water supply or sole source aquifer

Air Quality: Construction activities may generate some noise, fumes and dust.

Open Space and Recreational Opportunities: The proposed project's construction and operation will neither create nor destroy open space and recreational activities.

The project will not affect National Natural Landmarks or the Lake Michigan Coastal Zone.

B. Secondary Impacts

The city's Preliminary Engineering Report (PER) states: *The City through the authority of its Council, Board of Directors of Evansville Water and Sewer Utility, or other means will ensure [that] future development, as well as future collection system or treatment works projects connecting to SRF-funded facilities, will not adversely impact wetlands, archaeological/historical/structural resources, or other sensitive environmental resources. The City will require new development and treatment works projects to be constructed within the guidelines of the U.S. Fish and Wildlife Service, IDNR, IDEM and other environmental review authorities.*

C. Comments from Environmental Review Authorities

This document serves as the first notice to the State Historic Preservation Officer, the Indiana Department of Natural Resources Environmental Unit and the U. S. Fish and Wildlife Service.

In correspondence dated July 15, 2008, the Natural Resources Conservation Service stated: *The proposed project... will not cause a conversion of prime farmland.*

VIII. MITIGATION MEASURES

The following mitigation measures have been identified in the city's PER:

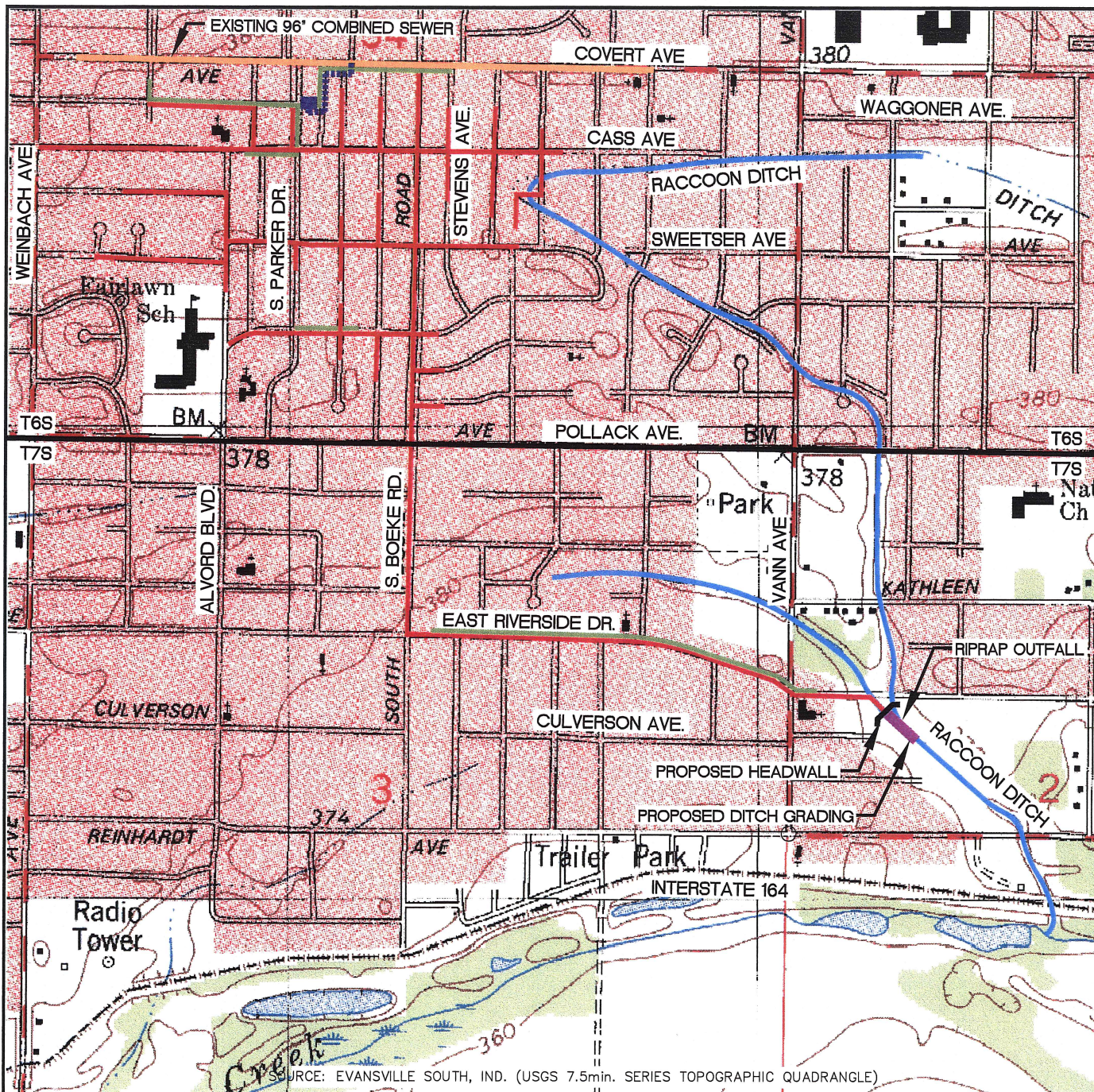
1. *Erosion and sediment control measures required by the project specifications will require that the contractor provide a schedule for clearing, grading, excavating, and restoring disturbed areas, along with a description of measures to be used during construction to ensure*

erosion/sediment control. The program shall meet all applicable federal, state, and local requirements.

- 2. Natural vegetation will be retained wherever feasible.*
- 3. Excavations will be limited to right-of-ways where possible.*
- 4. Appropriate agronomic practices (sediment basins, seeding, mulching) will be provided to control runoff, including shoreline and stream crossings, if applicable.*
- 5. Drainage systems, including surface and subsurface drainage, will be returned to their natural state as soon as possible, if disturbed.*
- 6. Roadways and parking lots will remain stabilized during construction to the extent possible.*
- 7. When possible, construction activities will be scheduled to avoid excessively wet conditions.*
- 8. No more than 100 feet of open trench will be allowed. Where possible, excavated material will be kept to the upland side of the trench. Excess material will be used elsewhere on the project.*
- 9. The existing topsoil will be reused during the restoration process.*

IX. PUBLIC PARTICIPATION

A properly noticed public hearing was conducted on August 19, 2008 at 1:30 p.m. in Room 100 at the Civic Center Complex. Questions were raised during the public hearing concerning which projects had the highest priority and the time frame for completing CSO projects.



SOURCE: EVANSVILLE SOUTH, IND. (USGS 7.5min. SERIES TOPOGRAPHIC QUADRANGLE)

NOTE: PROJECT WILL OCCUR IN T6S R10W SECTION 34; T7S R10W SECTION 2 & 3

LEGEND

- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY LIFT STATION
- PROPOSED SANITARY FORCEMAIN
- EXISTING DITCH



0 500' 1000' 2000'



SCALE: 1" = 1000'



VS ENGINEERING, INC.

4275 N. HIGH SCHOOL RD. INDIANAPOLIS, INDIANA 46254
TEL: (317) 293-3542 FAX: (317) 293-4737

CITY OF EVANSVILLE

PER D - PROJECT 4

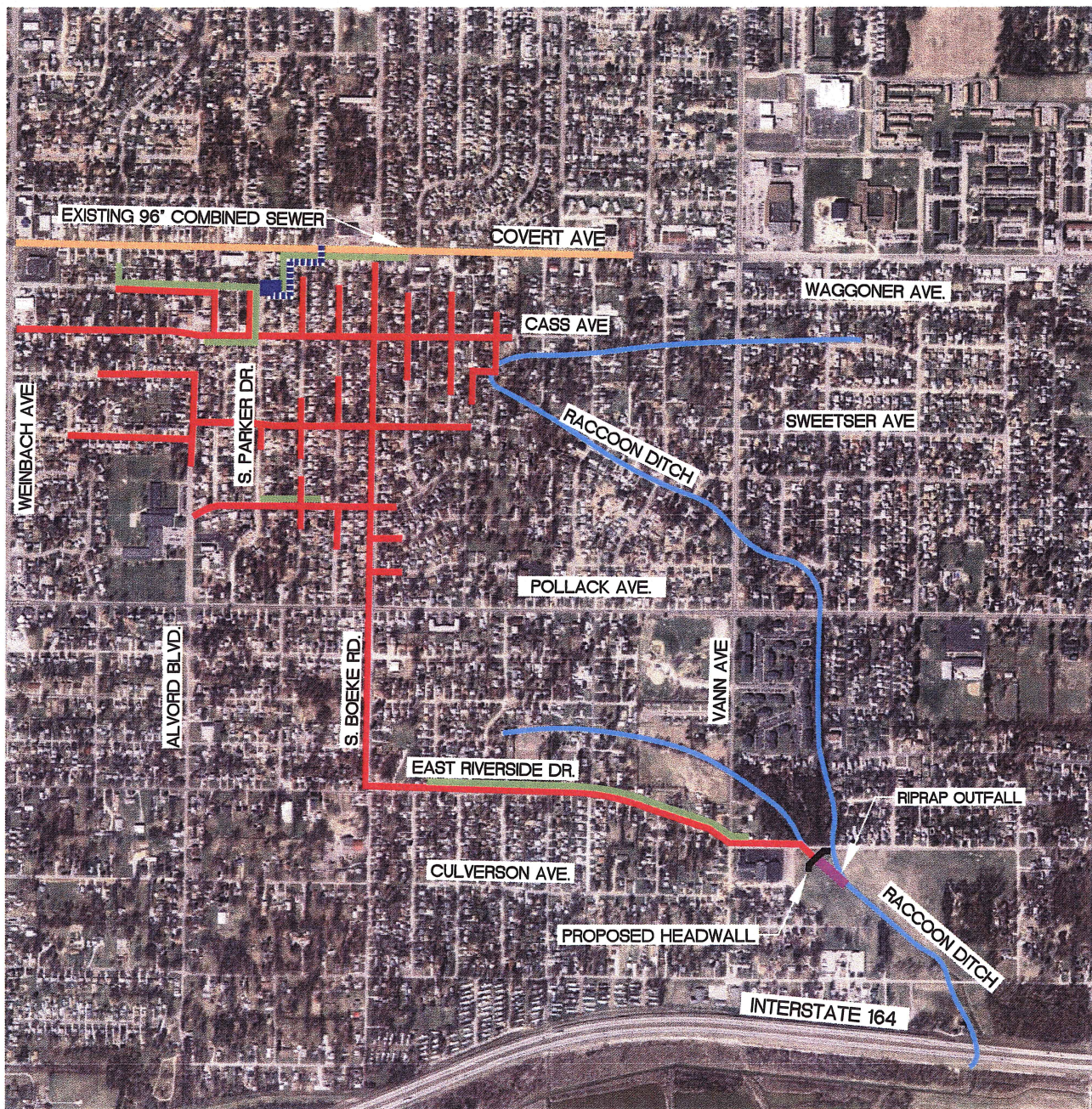
CASS AVENUE SEWER SEPARATION - CONSTRUCTION

TOPOGRAPHIC MAP

EXHIBIT

1

REVISED: FEBRUARY 25, 2009



LEGEND

- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY LIFT STATION
- PROPOSED SANITARY FORCE MAIN
- EXISTING DITCH



0 600' 1200' 2400'



SCALE: 1" = 1200'

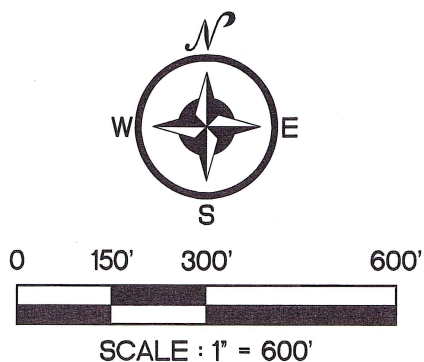
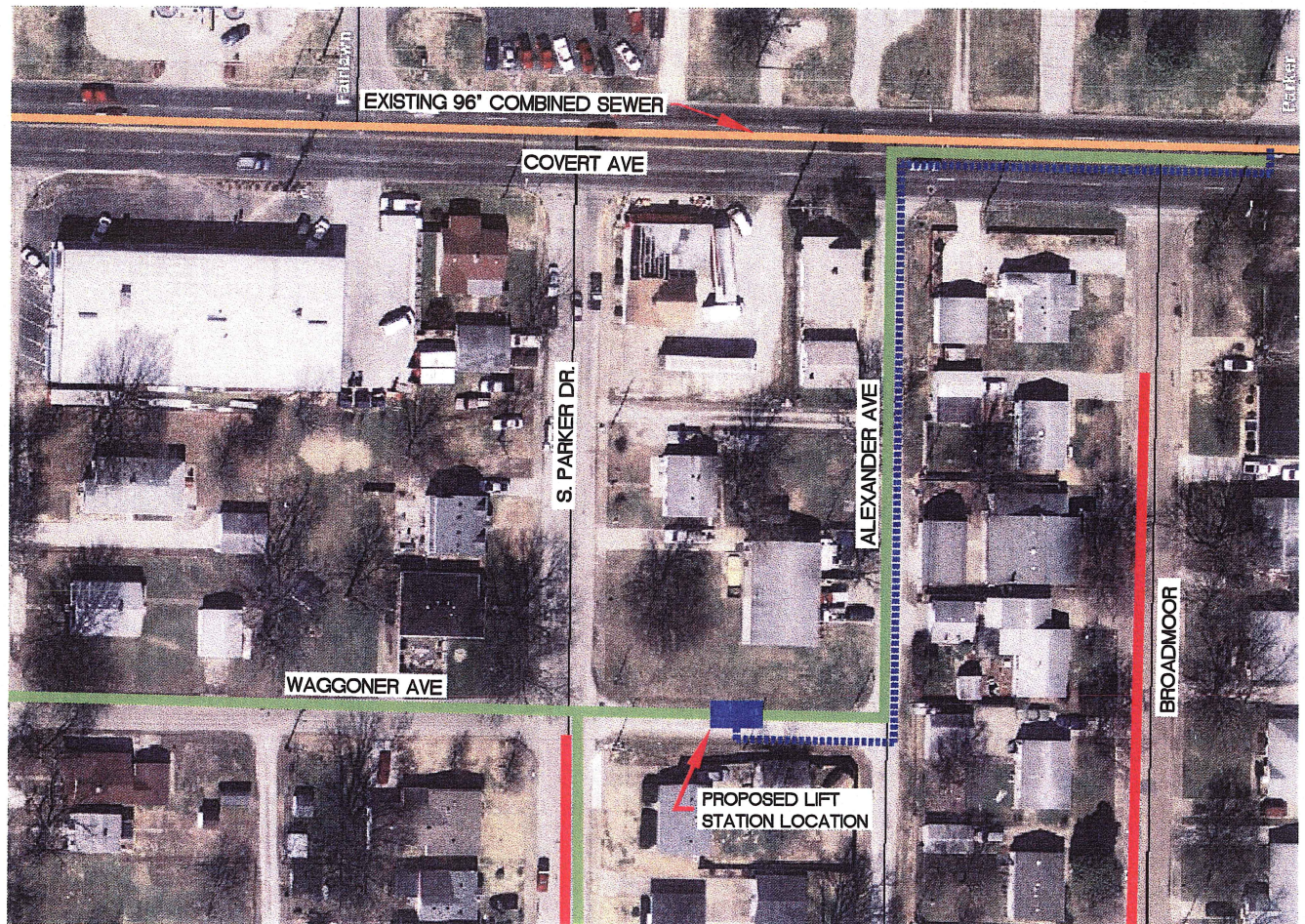


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CITY OF EVANSVILLE
PER D - PROJECT 4
CASS AVENUE SEWER SEPARATION - CONSTRUCTION
PROJECT LOCATION MAP

**EXHIBIT
2**



LEGEND

- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY LIFT STATION
- PROPOSED SANITARY FORCE MAIN

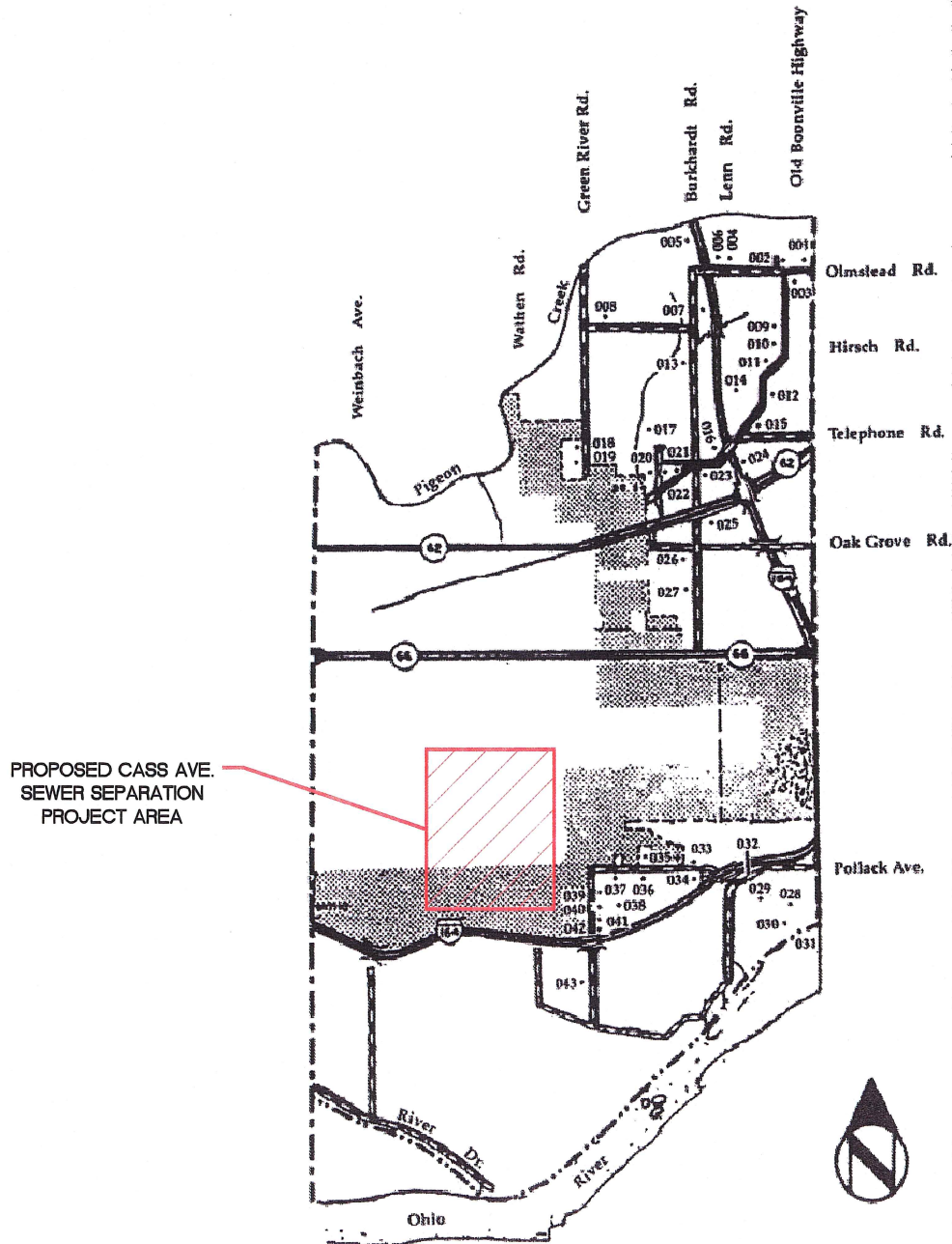
VS ENGINEERING, INC.
 4275 N. HIGH SCHOOL RD. INDIANAPOLIS, INDIANA 46254
 TEL. (317) 293-3542 FAX: (317) 293-4737

rec 12/18/08

CITY OF EVANSVILLE
 PER D - PROJECT 4
 CASS AVENUE SEWER SEPARATION - CONSTRUCTION
**PROPOSED SANITARY LIFT STATION
 AT WAGGONER AVE.**

**EXHIBIT
 3**

Knight Township (20001-043)



SOURCE: VANDERBURGH COUNTY INTERM REPORT EVANSVILLE, IND. (PAGE 37)

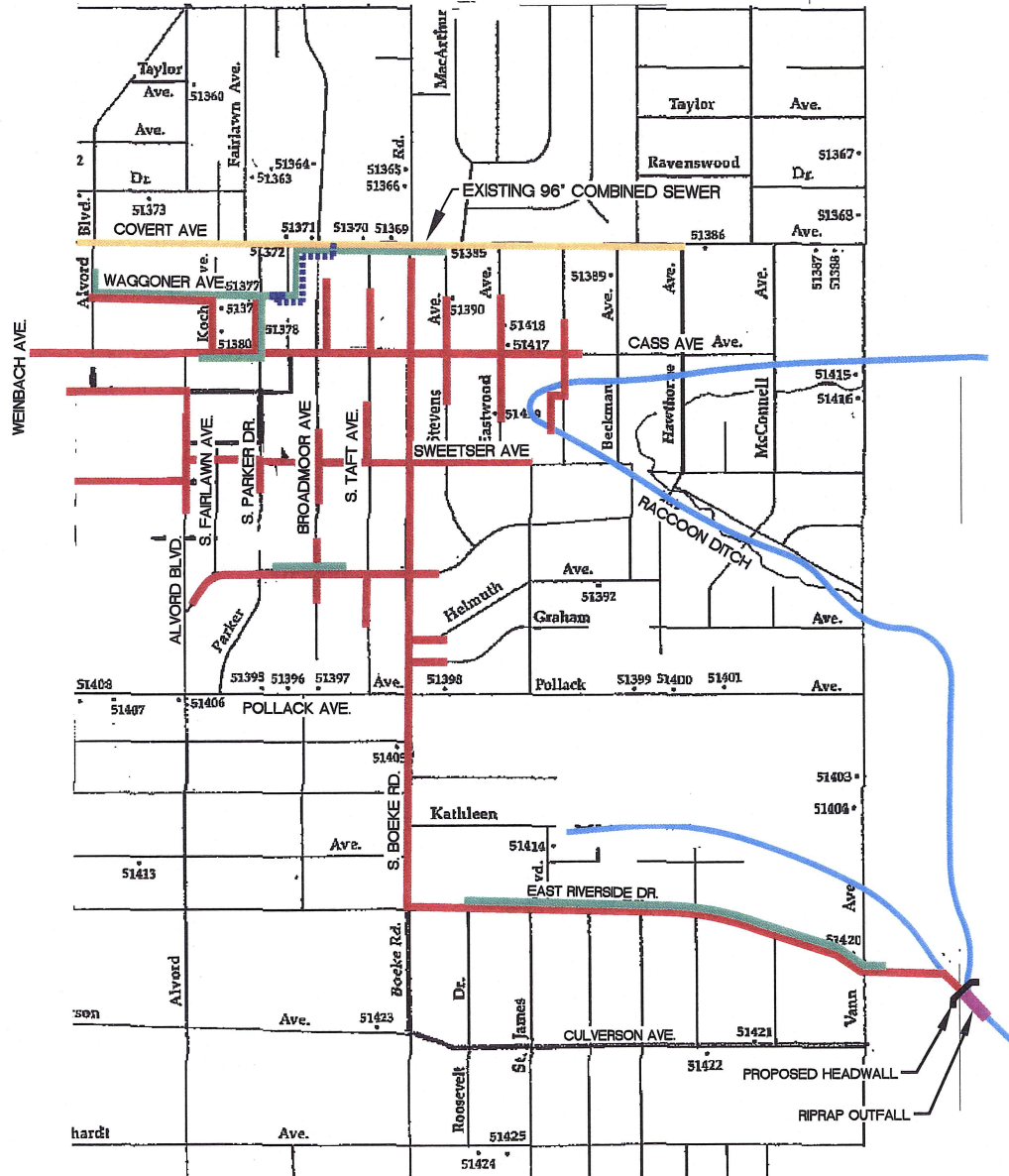
VS ENGINEERING, INC.
 4275 N. HIGH SCHOOL RD., INDIANAPOLIS, INDIANA 46254
 TEL: (317) 293-3542 FAX: (317) 293-4737

CITY OF EVANSVILLE
 PER D - PROJECT 4
 CASS AVENUE SEWER SEPARATION - CONSTRUCTION
HISTORICAL SITES MAP

EXHIBIT
4

REVISED: NOVEMBER 26, 2008

Evansville Scattered Sites (51350-425)



SCALE : NO SCALE

LEGEND

- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY LIFT STATION
- PROPOSED SANITARY FORCE MAIN
- EXISTING DITCH

SOURCE: VANDERBURGH COUNTY INTERM REPORT EVANSVILLE, IND. (PAGE 180)



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CITY OF EVANSVILLE

PER D - PROJECT 4

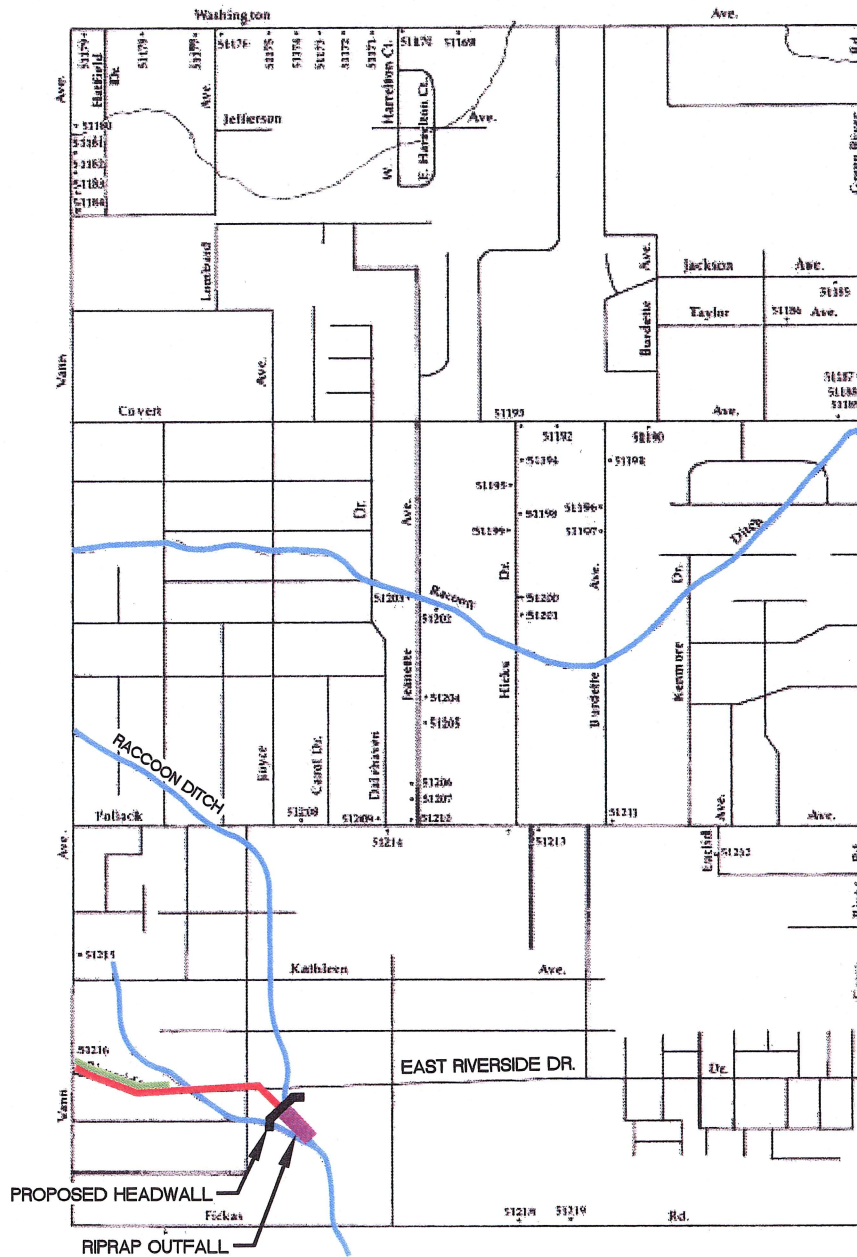
CASS AVENUE SEWER SEPARATION - CONSTRUCTION

HISTORIC SITES MAP

EXHIBIT

5

Evansville Scattered Sites (51190-220)



LEGEND

- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- EXISTING DITCH

SOURCE: VANDERBURGH COUNTY INTERM REPORT EVANSVILLE, IND. (PAGE 172)

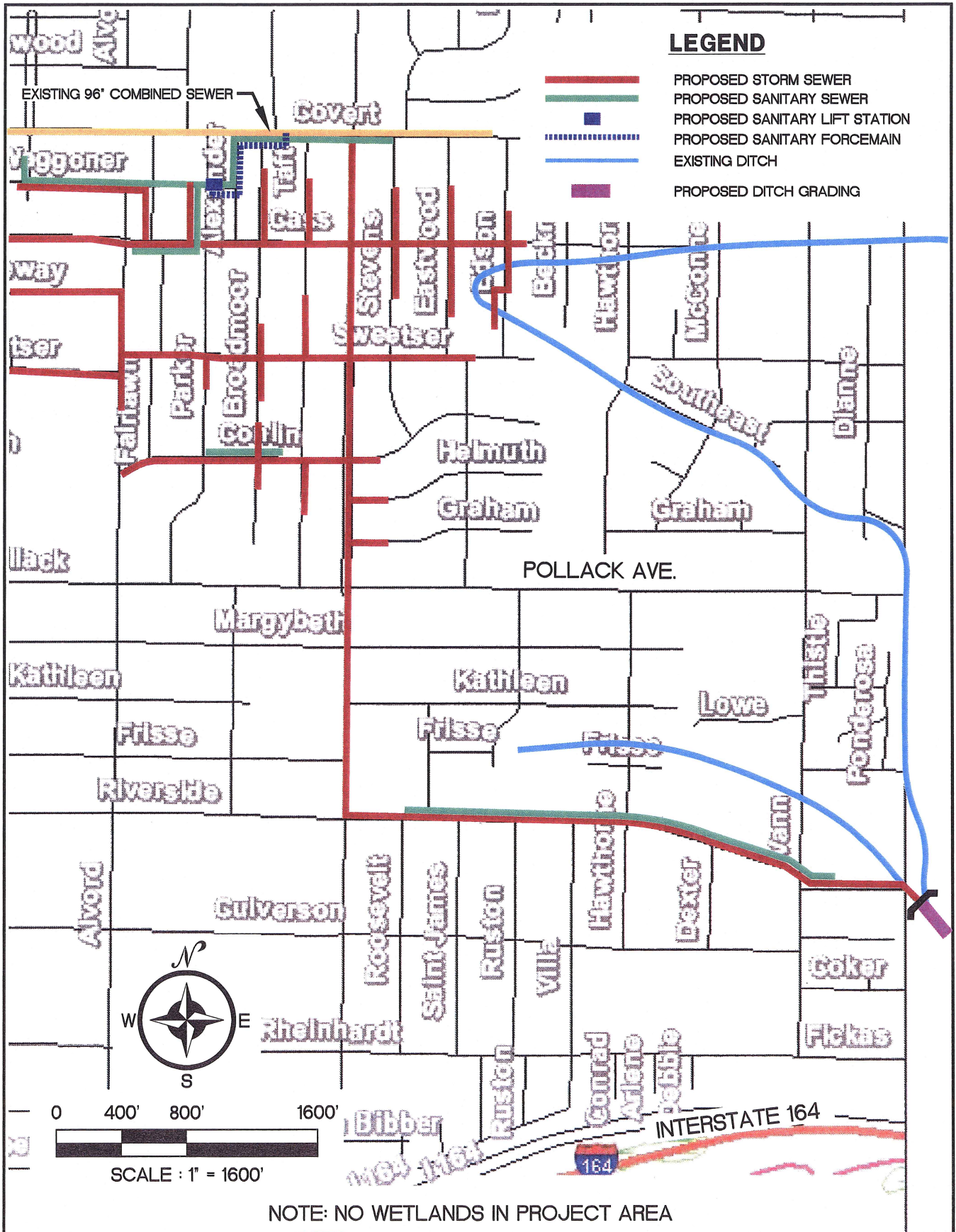


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CITY OF EVANSVILLE
PER D - PROJECT 4
CASS AVENUE SEWER SEPARATION - CONSTRUCTION
HISTORICAL SITES MAP

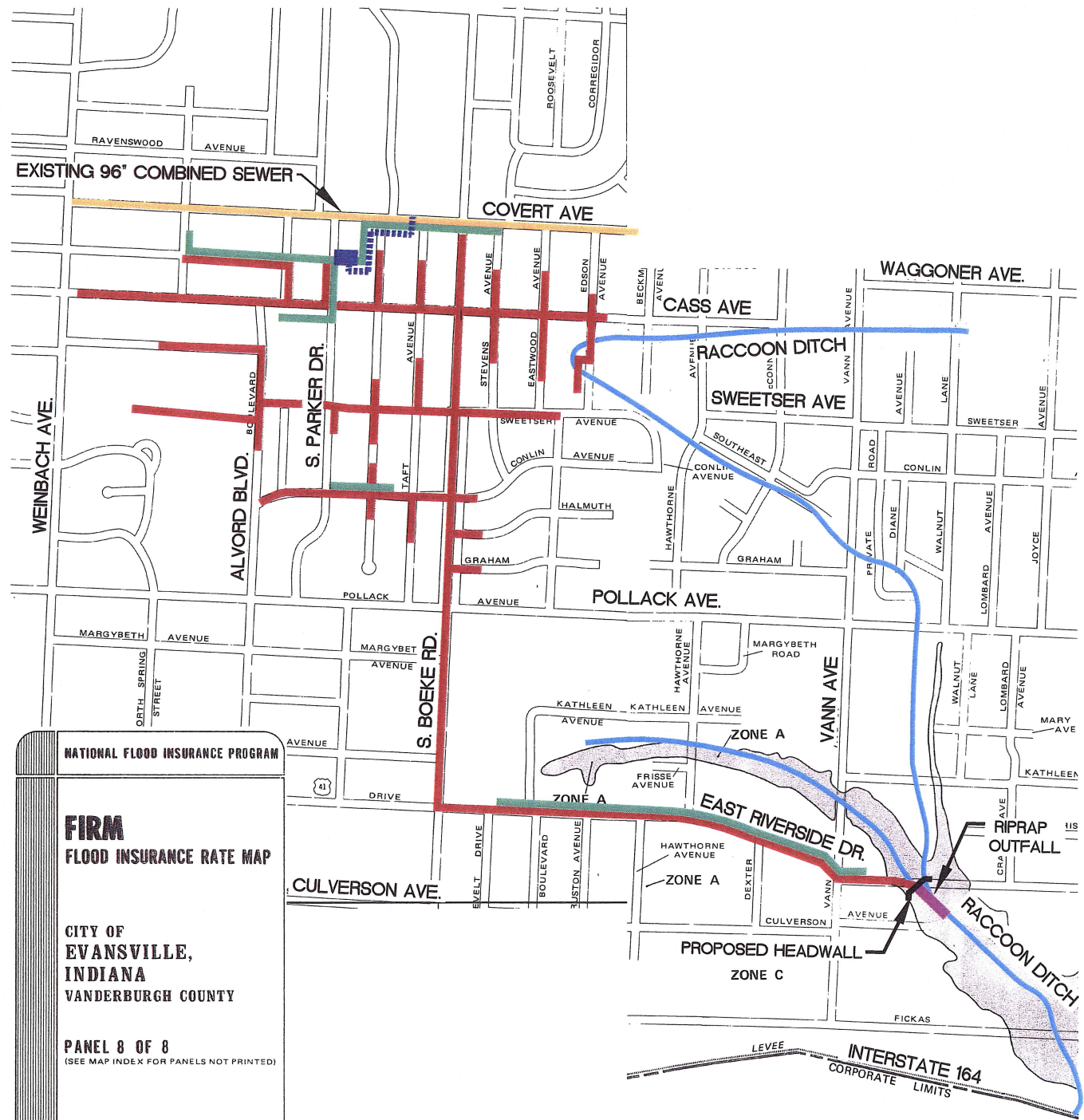
EXHIBIT
6

REVISED: NOVEMBER 26, 2008



DIRECTOR, A. VANDERKAM, City of Evansville, INDIANA, MAPS/VIEW CASE AVE, 1:SCALE...
FILE: WETLAND CASE AVE D 4-3 REV.DWG
DATE: 02/25/2009 3:59pm

<p>VS ENGINEERING, INC. 4275 N. HIGH SCHOOL RD. INDIANAPOLIS, INDIANA 46254 TEL: (317) 293-3542 FAX: (317) 293-4737</p>	<p>CITY OF EVANSVILLE PER D - PROJECT 4 CASS AVENUE SEWER SEPARATION - CONSTRUCTION</p>	<p>EXHIBIT 7</p>	
	<p>WETLANDS MAP</p>		
	<p>REVISED: FEBRUARY 25, 2009</p>		



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
EVANSVILLE,
INDIANA
VANDERBURGH COUNTY

PANEL 8 OF 8
(SEE MAP INDEX FOR PANELS NOT PRINTED)

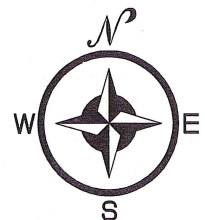
COMMUNITY-PANEL NUMBER
180257 0008 B

EFFECTIVE DATE:
OCTOBER 15, 1981

federal emergency management agency
federal insurance administration

LEGEND

- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY LIFT STATION
- PROPOSED SANITARY FORCE MAIN
- EXISTING DITCH
- PROPOSED DITCH GRADING



APPROXIMATE SCALE
600 0 600 FEET



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CITY OF EVANSVILLE
PER D - PROJECT 4
CASS AVENUE SEWER SEPARATION - CONSTRUCTION
FLOODPLAIN MAP

EXHIBIT
8

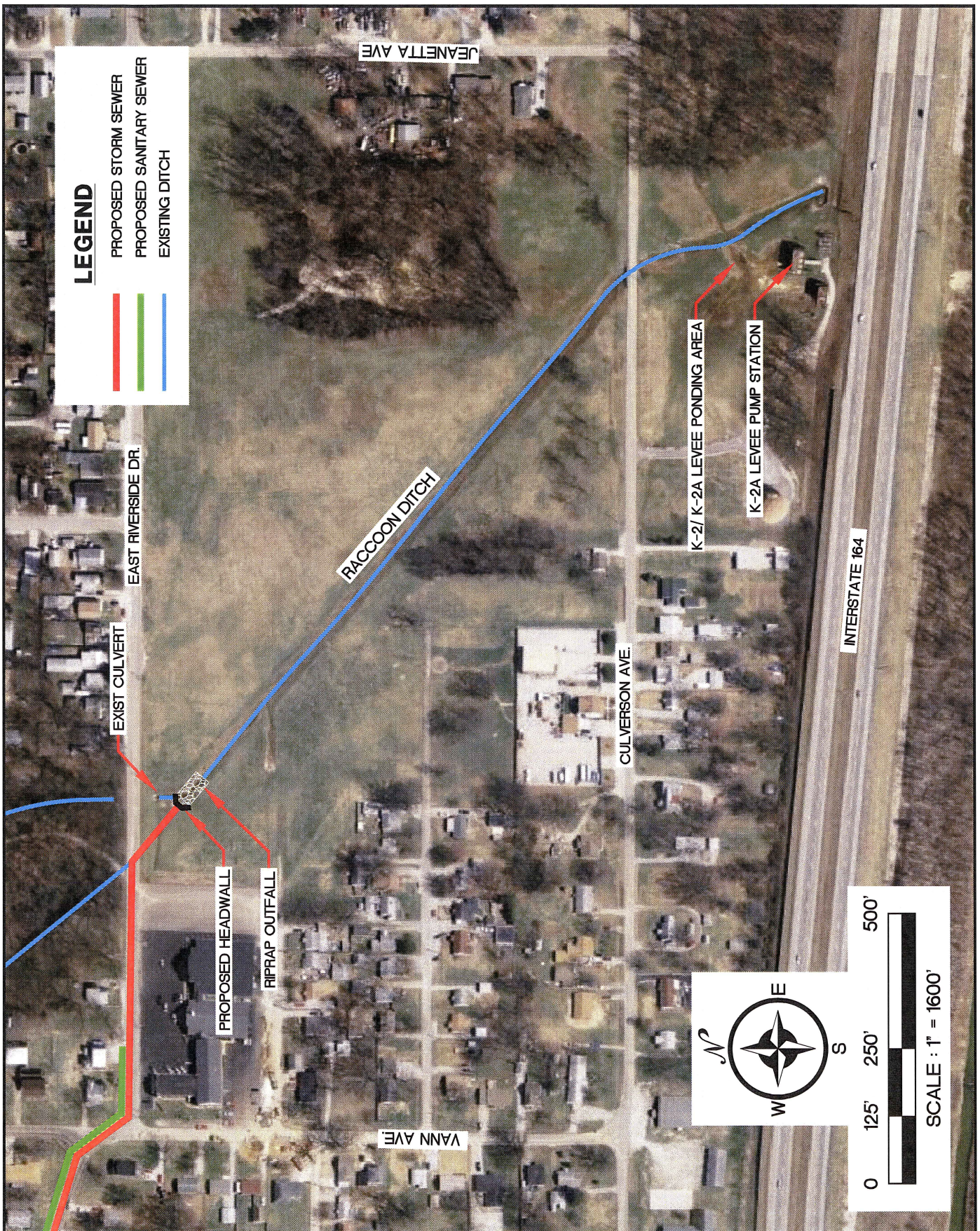
DIRECTORY: F:\2008\08-2483 - Evansville\DESIGN\DRAWINGS\ENVIRONMENTAL\RACCOON DITCH\ L7SCALE...1
 PLOT: RACCOON DITCH Aerial 4-8.dwg
 DATE: Dec 17, 2008 - 9:55am



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 4275 N. HIGH SCHOOL RD., INDIANAPOLIS, INDIANA 46254
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CITY OF EVANSVILLE
 PER D - PROJECT 4
 CASS AVENUE SEWER SEPARATION - CONSTRUCTION
**PROPOSED STORM WATER OUTFALL
 AT RACCOON DITCH**

EXHIBIT
9



REVISED: NOVEMBER 26, 2008



LOOKING NORTH ALONG RACCOON DITCH, TOWARDS A
CULVERT UNDER RIVERSIDE DRIVE
NOTE: THE PROPOSED 84" TRUNK LINE WOULD OUTLET INTO
RACCOON DITCH NEAR EXISTING CULVERT



LOOKING SOUTHEAST ALONG RACCOON DITCH,
EAST OF CULVERSON AVE.



LOOKING SOUTH AT RACCOON DITCH CULVERT UNDER I-164.
NOTE : K-2A LEVEE PUMP STATION TO RIGHT.

DIRECTOR: J. VORONOV-2483 City of Evansville, Design/Environmental, RACCOON DITCH, L1SCALE...1
 FILED: RACCOON DITCH PHOTO EX 4-10.dwg
 DATE: Nov 30, 2008 9:32pm

VS ENGINEERING, INC.
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CITY OF EVANSVILLE
 PER D - PROJECT 4
 CASS AVENUE SEWER SEPARATION - CONSTRUCTION
RACCOON DITCH PHOTOGRAPHS

EXHIBIT
10

REVISED: NOVEMBER 26, 2008